

# Exhibit 24

# Facebook's Reach (on Reach)

## Miscalculations In The Age Of Precision



# Summary

In what's seemingly become a regular occurrence as of late, Facebook was recently forced again to publicly defend some of their key metrics to the advertising community. This time it involved the estimated reach numbers that Facebook reflects in their Ads Manager product after global reports surfaced that the potential reach for younger demos in several countries was higher than current Census population data.

This discrepancy was brought to the forefront in the United States when a respected Wall Street analyst did the same analysis at the country level for the investor community. This "potential reach" inflation should be important to advertisers since the metric lives in the Facebook Ads Manager product; a self-serve tool that allows anyone to plan, budget, buy and optimize their own campaigns across Facebook platforms.

In this report, we set out to confirm the numbers that were being reported in the press and then we drilled down further into several geographies - states, cities, zip codes - to see if this reach inflation is a nationwide issue or if it's just isolated to a few areas throughout the country.

Finally, we set forth an example of executing an advertising schedule through Facebook Ads Manager to show the potential impact that reach inflation could have on an advertiser's campaign.

# In August, AdNews In Australia Revealed That Facebook Claims It Can Reach More Young People Than What The Census Reports

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**RECOGNITION IS THE GREATEST MOTIVATOR**

### Facebook says platform can reach 1.7m more young adult users than Aussie population

By Arvind Hickman | 30 August 2017 4 Comments

Update: AdNews has updated the original article with the latest rebased estimates from the ABS as well as adding new figures from Nielsen. The headline figure changes from 2 million to 1.7 million and all subsequent calculations have been adjusted.

Facebook claims its platform allows advertisers to reach 1.7 million more 16- to 40-year-old users in Australia than the country's official population.

The gap between Facebook users and population data has been revised from the original article AdNews ran last week to incorporate the latest rebased estimates of 2016 census data. This includes adjusting undercounts and overcounts of younger and older demographics as well as adding 600,000 residents who were overseas on census day and not included in the ABS's original estimate.

It provides a more accurate picture of the difference between Australia's official population and the number of users Facebook says advertisers can reach in this market.

The gap is significant when compared to the size of Australia's largest cities. The additional 1.7 million users on Facebook in the millennial and Gen X age groups are nearly enough to populate Australia's fourth-largest city, Perth.

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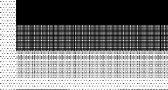
FACEBOOK'S REACH (ON REACH)



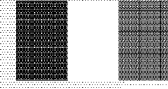
# In Fact, This Facebook Reach Inflation Occurs Globally



United Kingdom



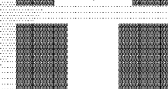
Germany



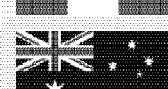
France



Canada



Italy



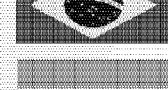
Australia



Mexico



Brazil



Argentina

## P18-24

FB

Potential  
Reach

Census  
5.6MM

7.6MM

Diff  
+2.0MM

5.8MM

7.8MM

+2.0MM

5.5MM

7.3MM

+1.8MM

3.1MM

4.1MM

+1.0MM

4.3MM

5.6MM

+1.3MM

2.1MM

3.0MM

+0.9MM

15.2MM

23.0MM

+7.8MM

23.5MM

33.0MM

+9.5MM

4.7MM

7.9MM

+3.2MM

## P25-34

FB

Potential  
Reach

Census  
8.9MM

11.0MM

Diff  
+2.1MM

9.9MM

10.0MM

+97K

8.0MM

9.3MM

+1.3MM

4.8MM

6.0MM

+1.2MM

7.0MM

7.6MM

+0.6MM

3.3MM

4.3MM

+1.0MM

19.9MM

22.0MM

+2.1MM

34.0MM

34.0MM

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6.6MM

8.8MM

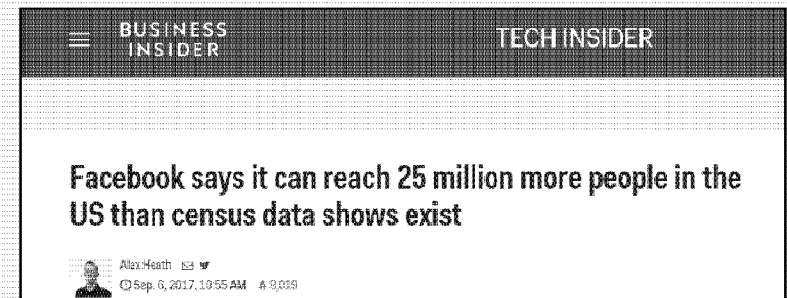
+2.2MM

## FACEBOOK'S REACH (ON REACH)

Source: 2017 estimated Global Census; Facebook Ads Manager. "FB Potential Reach" includes Facebook + Instagram + Audience Network + Messenger platforms and reflects "everyone in this location" data pulled on September 22<sup>nd</sup>, 2017 (Facebook numbers are fluid and are subject to change based on the date when numbers are pulled).



# This Became A Big Topic In The United States When A Respected Analyst Brought It To The Industry's Attention



FACEBOOK'S REACH (ON REACH)



# Using The Publicly Accessible Ads Manager, Anyone With A Facebook Account Can Review The Platform's Estimated Reach

<https://www.facebook.com/ads/manager/creation>

Jason White (3763462631)

Search

Ad Set Name: US - 18-24

Page: Choose the Facebook Page you want to promote.

Facebook Page: + Create a Facebook Page

Audience: Define who you want to see your ads. Learn more

Create New Use a Saved Audience

Custom Audiences: Target Ads to People Who Know Your Business

Locations: Everyone in this location

United States

United States

Include Type to add more locations Browse

Add Sub Locations

Age: 18 - 24

Gender: Men Women

Languages: Enter a language

Close

**Audience Size**

Your audience selection is fairly broad.

Potential Reach: 40,000,000 people

**Estimated Daily Results**

Reach: 11,000 - 67,000 (of 35,000,000)

The accuracy of estimates is based on factors like past campaign data, the budget you entered and market data. Numbers are provided to give you an idea of performance for your budget, but are only estimates and don't guarantee results.

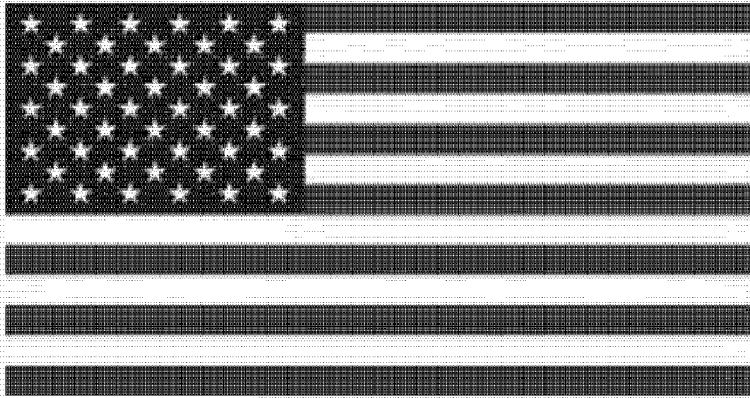
Were those estimates helpful?

FACEBOOK'S REACH (ON REACH)





# So We Were Able To Confirm The Numbers That Were Reported In The Press



Facebook's potential reach against Adults 18-34 in the United States is almost 22 Million higher than the U.S. Census A18-34 population

## Demo      2016 Census

P18-24      31,020,241

P25-34      44,268,470

## Facebook Platforms - Potential Reach

(FB + Instagram + Audience Network + Messenger)

## "Everyone In This Location"

39,000,000      +8.0MM

58,000,000      +13.7MM

P18-34 Diff:      +21.7MM

## FACEBOOK'S REACH (ON REACH)

Source: 2016 U.S. Census (American Community Survey, 1-year estimate); Facebook Ads Manager. Based on "everyone in this location" United States data pulled on September 22<sup>nd</sup>, 2017. (Facebook numbers are fluid and are subject to change based on the date when numbers are pulled).





**One Of The More Common Explanations For  
Why There Is This Reach Overage Is Due To  
Visits From Travelers Outside The Geography...**

***But Is This True?***

# From An Audience Perspective, The Ads Manager Tool Allows You To Select Just Those People Who Live In A Specific Location

The screenshot shows the Facebook Ads Manager interface. On the left, the navigation menu includes Campaign, Ad Account, Ad Set, and Ad. The main area is titled 'Audience' and shows options to 'Create New' or 'Use a Saved Audience'. A 'Custom Audiences' dialog box is open, showing 'Locations' and 'United States'. A callout box points to the 'People who live in this location' option, stating: 'Naturally by selecting “people who live in this location,” travelers should be excluded from the target audience'. The right sidebar shows 'Audience Size' with a gauge, 'Potential Reach: 58,040,000 people', and 'Estimated Daily Results'.

**Naturally by selecting “people who live in this location,” travelers should be excluded from the target audience**

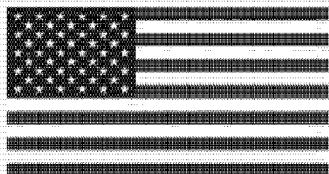
<https://www.facebook.com/ads/manager/creation>

FACEBOOK'S REACH (ON REACH)



# Interestingly, There's No Difference In The Potential Reach Between "Everyone" In The U.S. & Those That "Live" Here

Although it'd be expected that "everyone in this location" would include non-resident travelers, this universe within Facebook Ads Manager reflects the same size as "people who live in this location"



## Facebook Platforms - Potential Reach

(FB + Instagram + Audience Network + Messenger)

### Demo

P18-24

### "Everyone In This Location"

39,000,000

P25-34

58,000,000

*In theory, "everyone" should include travelers as well even though the country-wide numbers are the same as the resident totals (i.e., "people who live in this location")*

### "People Who Live In This Location"

39,000,000

58,000,000

Note: there are only 670K and 940K identified within the potential reach as those who are "traveling in this location" among P18-24 & P25-34, respectively

### FACEBOOK'S REACH (ON REACH)

Source: 2016 U.S. Census (American Community Survey, 1-year estimate); Facebook Ads Manager. Based on "everyone in this location" and "people who live in this location" data pulled on September 22<sup>nd</sup>, 2017. (Facebook numbers are fluid and are subject to change based on the date when numbers are pulled).



# Is This Reach Inflation Issue Nationwide Or Just Isolated To A Few Areas?

To Answer This We Conducted The Below P18-34 Analysis  
On Several Geographical Levels:

2016 U.S. Census Data

Vs.

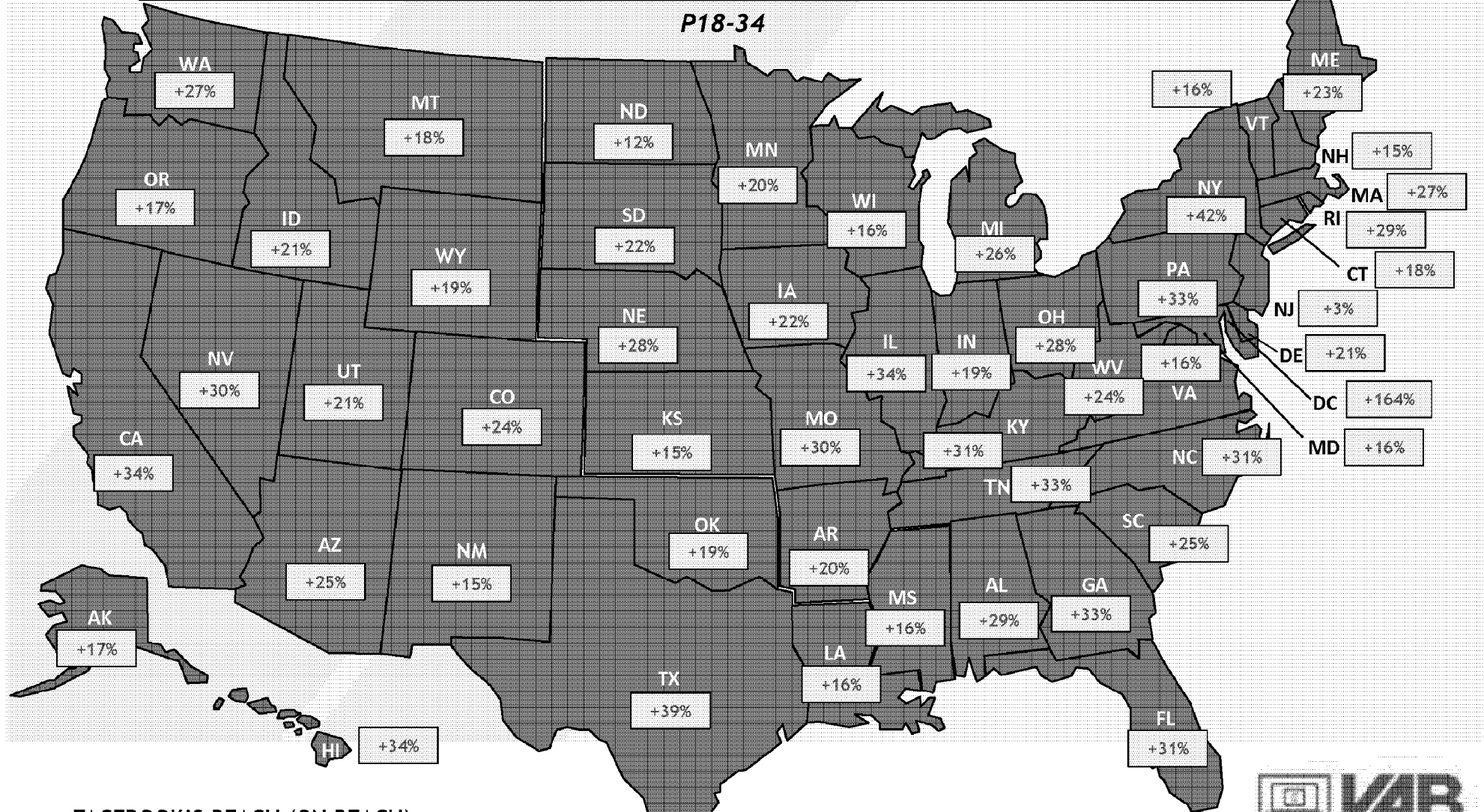
“People Who *Live* In This Location” Data  
From Facebook Ads Manager





# In ***Every*** State, Facebook Claims They Can Reach More P18-34 Residents Than What Is Reported By The U.S. Census Bureau

## % Overage of Facebook Platforms' Potential Reach Vs. U.S. Census Population Data



### FACEBOOK'S REACH (ON REACH)

Source: 2016 U.S. Census (American Community Survey, 1-year estimate); Facebook Ads Manager based on data pulled on September 22<sup>nd</sup>, 2017; P18-34. "FB Potential Reach" includes Facebook + Instagram + Audience Network + Messenger platforms. Facebook data based on "People who live in this location."



# Facebook Platforms' Reach Inflation Stretches Anywhere Between 3% - 42% By State Vs. The U.S. Census

## P18-34 Population By State: 2016 U.S. Census vs. Facebook Platforms' Potential Reach

		Facebook Ads Manager (Potential Reach)					Facebook Ads Manager (Potential Reach)		
		"People Who Live In This Location"					"People Who Live In This Location"		
		FB Platforms*					FB Platforms*		
		P18-34					P18-34		
State	2016 U.S. Census P18-34	Potential Reach	# Difference	% Difference	State	2016 U.S. Census P18-34	Potential Reach	# Difference	% Difference
Alabama	1,059,379	1,400,000	310,621	28%	Montana	228,312	270,000	41,688	18%
Alaska	197,344	230,000	32,656	17%	Nebraska	444,358	570,000	125,642	28%
Arizona	1,601,077	2,000,000	398,923	25%	Nevada	676,213	880,000	203,787	30%
Arkansas	672,356	810,000	137,644	20%	New Hampshire	286,981	330,000	43,019	15%
California	9,734,004	13,000,000	3,265,996	34%	New Jersey	1,940,959	2,000,000	59,050	3%
Colorado	1,374,055	1,700,000	325,945	24%	New Mexico	476,552	550,000	73,448	15%
Connecticut	793,972	940,000	146,028	18%	New York	4,798,105	6,800,000	2,001,895	42%
Delaware	214,215	260,000	45,785	21%	North Carolina	2,293,174	3,000,000	706,826	31%
District of Columbia	235,004	520,000	284,996	123%	North Dakota	204,647	230,000	25,353	12%
Florida	4,431,674	5,800,000	1,368,326	31%	Ohio	2,578,391	3,300,000	721,609	28%
Georgia	2,412,627	3,200,000	787,373	33%	Oklahoma	925,963	1,100,000	174,037	19%
Hawaii	335,711	450,000	114,289	34%	Oregon	941,497	1,100,000	158,503	17%
Idaho	580,390	460,000	79,610	14%	Pennsylvania	2,363,667	3,800,000	1,436,333	61%
Illinois	2,982,759	4,000,000	1,017,241	34%	Rhode Island	256,712	330,000	73,288	29%
Indiana	1,518,969	1,800,000	281,031	18%	South Carolina	1,116,252	1,400,000	283,748	25%
Iowa	714,710	870,000	155,290	22%	South Dakota	197,324	240,000	42,676	22%
Kansas	677,398	780,000	102,602	15%	Tennessee	1,503,170	2,000,000	496,830	33%
Kentucky	993,882	1,300,000	306,118	31%	Texas	6,826,336	9,500,000	2,673,664	39%
Louisiana	1,118,016	1,300,000	181,984	16%	Utah	793,316	960,000	166,684	21%
Maine	267,627	330,000	62,373	23%	Vermont	138,035	160,000	21,965	16%
Maryland	1,333,733	1,600,000	216,217	16%	Virginia	1,976,775	2,800,000	823,225	42%
Massachusetts	1,655,262	2,100,000	444,738	27%	Washington	1,734,544	2,200,000	465,456	27%
Michigan	2,223,939	2,800,000	576,061	26%	West Virginia	379,038	470,000	90,962	24%
Minnesota	1,253,029	1,500,000	246,971	20%	Wisconsin	1,288,652	1,500,000	211,348	16%
Mississippi	687,407	800,000	112,593	16%	Wyoming	134,665	160,000	25,335	19%
Missouri	1,383,111	1,800,000	416,889	30%	<b>Grand Total</b>	<b>75,336,230</b>	<b>97,000,000</b>	<b>21,663,770</b>	<b>29%</b>

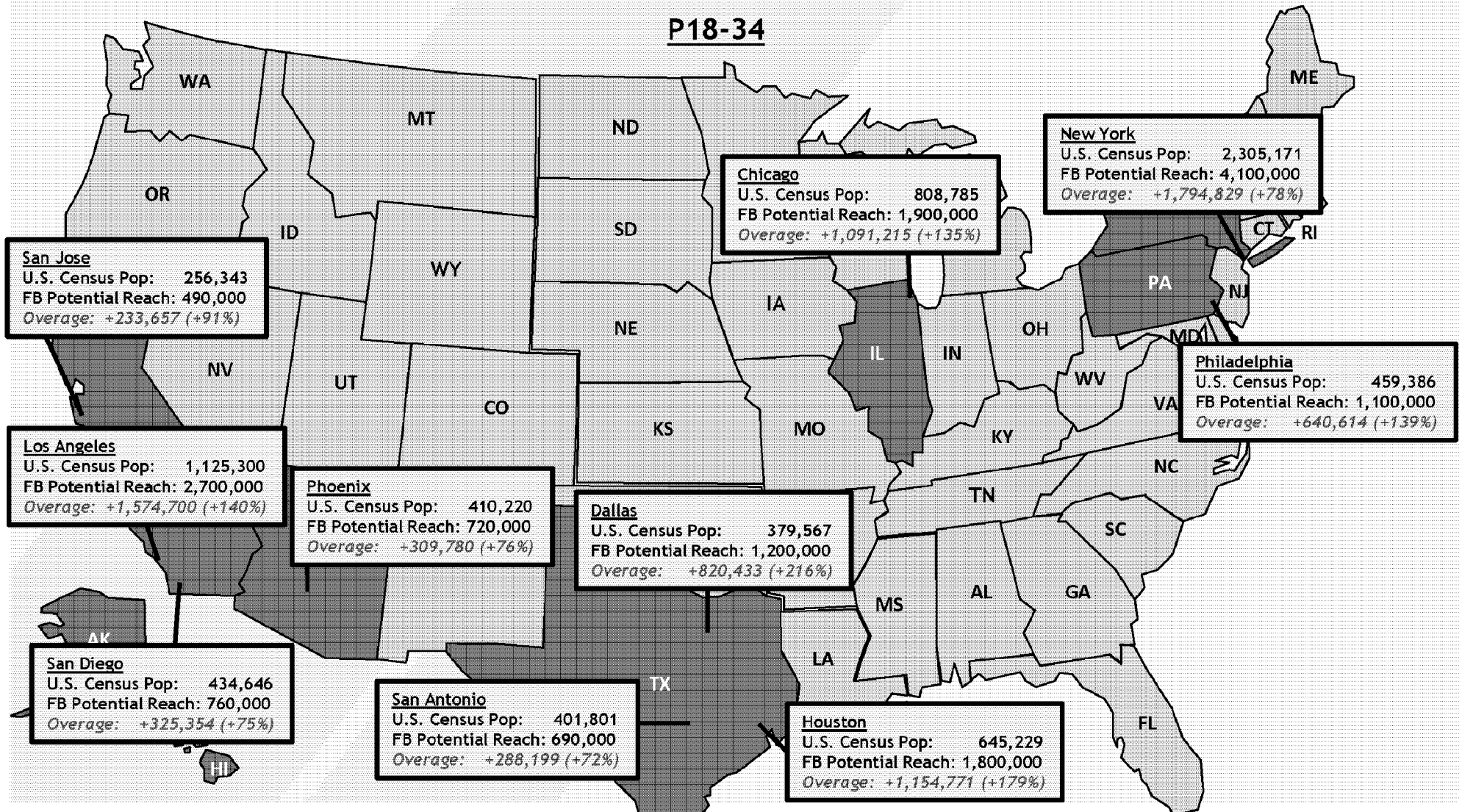
### FACEBOOK'S REACH (ON REACH)

Source: 2016 U.S. Census (American Community Survey, 1-year estimate); Facebook Ads Manager based on data pulled on September 22<sup>nd</sup>, 2017; P18-34. "FB Potential Reach" includes Facebook + Instagram + Audience Network + Messenger platforms. Facebook data based on "People who live in this location." (Facebook numbers are fluid and are subject to change based on the date when numbers are pulled).





# The Facebook P18-34 Reach Inflation Is Much More Pronounced Within The Ten Most Populous Cities

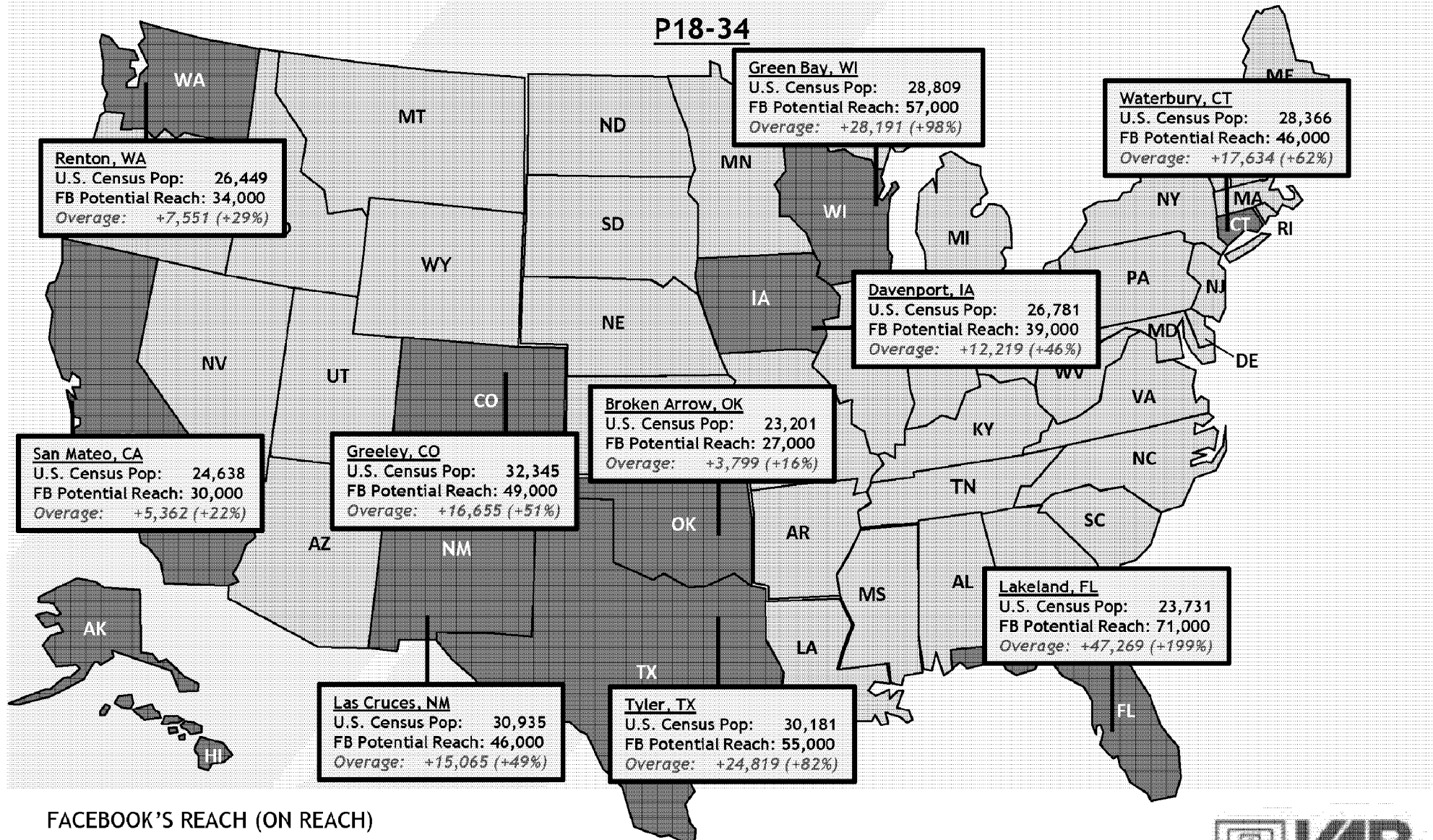


## FACEBOOK'S REACH (ON REACH)

Source: 2016 U.S. Census (American Community Survey, 1-year estimate); Facebook Ads Manager based on data pulled on September 22<sup>nd</sup>, 2017; P18-34. "FB Potential Reach" includes Facebook + Instagram + Audience Network + Messenger platforms. Facebook data based on "People who live in this location" and reflects the city with no radius added. The 10 most populous cities are based on total population. (Facebook numbers are fluid and are subject to change based on the date when numbers are pulled).



# Similar P18-34 Reach Inflation Is Seen Among “Mid-Sized” Cities As Well



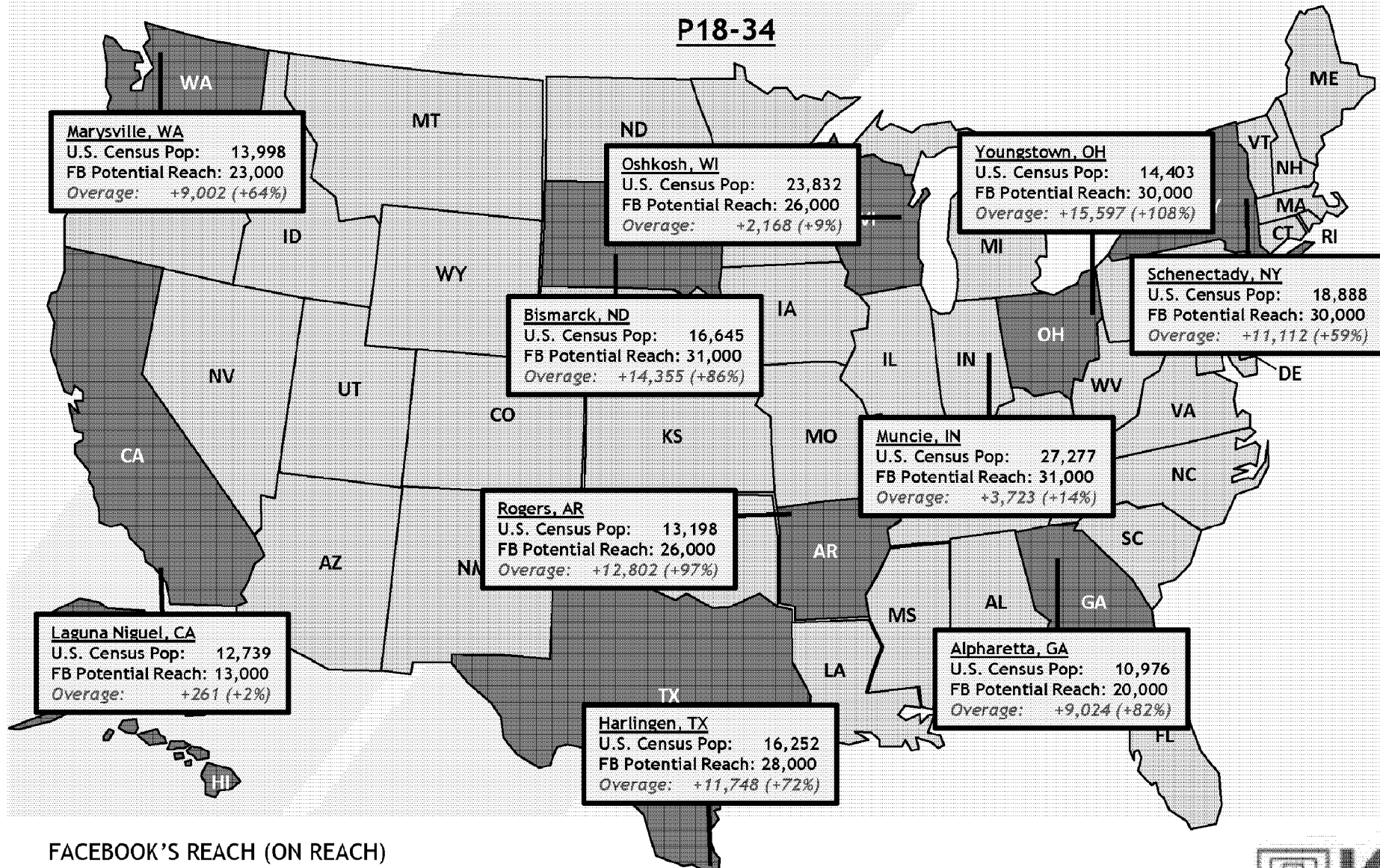
## FACEBOOK'S REACH (ON REACH)

Source: 2016 U.S. Census (American Community Survey, 1-year estimate); Facebook Ads Manager based on data pulled on September 22<sup>nd</sup>, 2017; P18-34. "FB Potential Reach" includes Facebook + Instagram + Audience Network + Messenger platforms. Facebook data based on "People who live in this location" and reflects the city with no radius added. "Mid-Sized" cities are based on a diverse cross-section of 10 cities with a total population between 100K - 110K with no more than one city reflected per state. (Facebook numbers are fluid and are subject to change based on the date when numbers are pulled).





# These P18-34 Reach Inflation Trends Are Also Seen Among “Smaller” Cities Throughout The Country

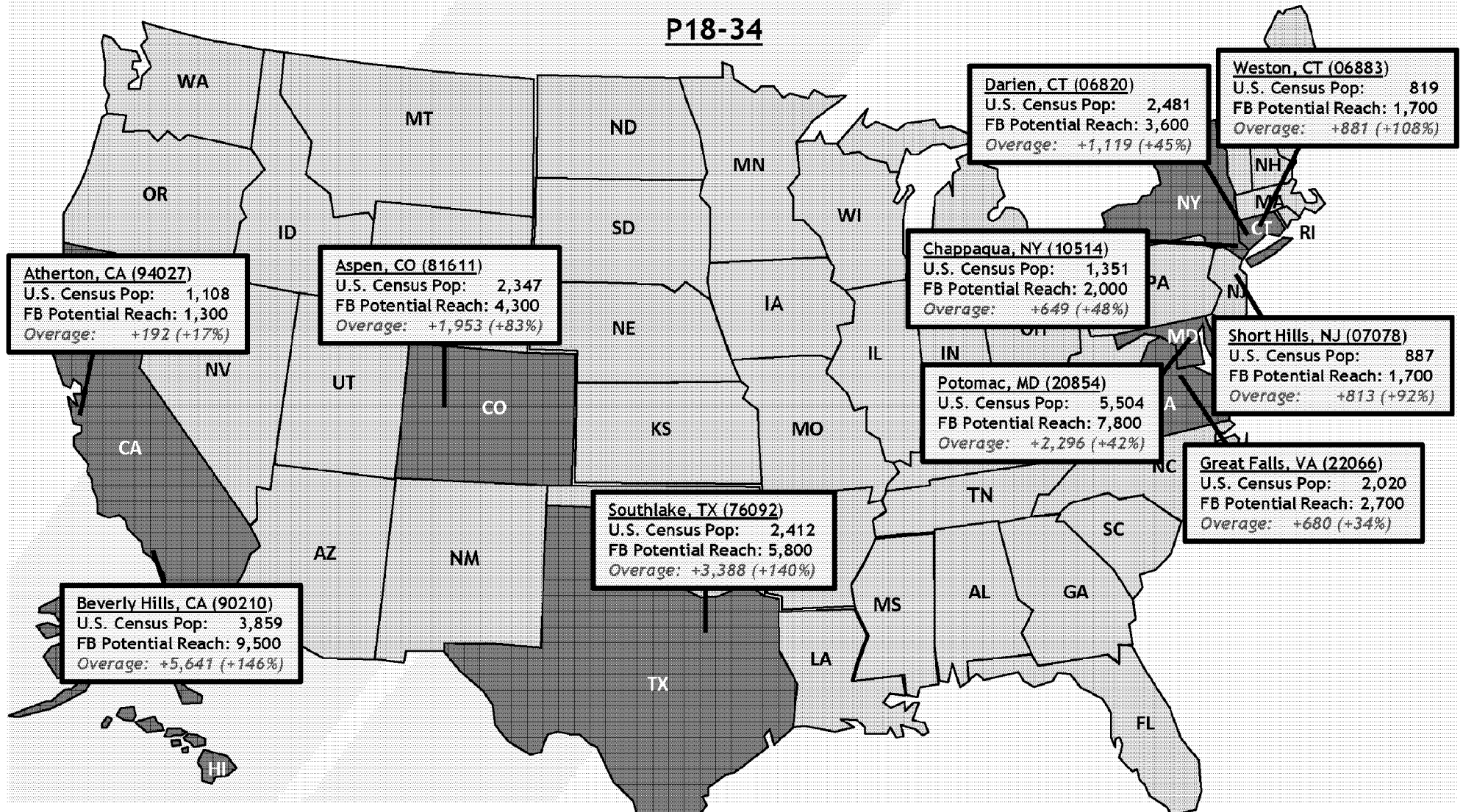


## FACEBOOK'S REACH (ON REACH)

Source: 2016 U.S. Census (American Community Survey, 1-year estimate); Facebook Ads Manager based on data pulled on September 22<sup>nd</sup>, 2017; P18-34. "FB Potential Reach" includes Facebook + Instagram + Audience Network + Messenger platforms. Facebook data based on "People who live in this location" and reflects the city with no radius added. "Smaller" cities are based on a diverse cross-section of ten cities with a total population between 60K - 70K, with no more than one city reflected per state. (Facebook numbers are fluid and are subject to change based on the date when numbers are pulled).



# Facebook Also Overestimates Their Potential Reach Among The Young & Affluent Within Targeted Zip Codes



## FACEBOOK'S REACH (ON REACH)

Source: 2015 U.S. Census (2016 data at the zip code level had not been released as of September 2017); Facebook Ads Manager based on data pulled on September 22<sup>nd</sup>, 2017; P18-34. "FB Potential Reach" includes Facebook + Instagram + Audience Network + Messenger platforms. Facebook data based on "People who live in this location." "Affluent" zip codes were selected based on metrics like median home values as reported by sources such as Forbes. (Facebook numbers are fluid and are subject to change based on the date when numbers are pulled).



**OK, So Reach Is Overstated...**

**So What?**



# There's A Potential For Facebook Reach Inflation To Have Real Consequences For An Advertiser's Overall Communications Plan

In addition to providing audience and targeting data, more importantly Facebook Ads Manager functions as a tool for an advertiser to plan, budget, buy and optimize their own campaigns across Facebook platforms.

Ad Set Name: US - 18-34

**Budget & Schedule**  
Define how much you'd like to spend, and when you'd like your ads to appear. Learn more.

Budget:  \$0.00 to USD

Actual amount spent daily may vary.

Schedule: ☒ Run my ad set continuously starting today  
☐ Set a start and end date

Start:    
End:    
Standard Time

Your ads will run for 1 day. You'll spend no more than \$5,000.00.

Optimization for Ad Delivery: ☒ Reach

Frequency Cap:  impression every  day

Bid Amount: ☒ Automatic - Let Facebook set the bid that helps you get the most reach at the best price.  
☐ Manual - Enter a bid based on what 1,000 impressions are worth to you.  
 per 1,000 impressions  
Suggested bid: \$6.59 USD (\$5.13-\$8.97)

When You Get Charged: ☒ Impression

Ad Scheduling: ☒ Run ads all the time  
☐ Run ads on a schedule

Delivery Type: ☒ Standard - Show your ads throughout your selected schedule (recommended)

**Audience Size**  
Your audience selection is fairly broad.  
Potential Reach: 97,000,000 people

**Estimated Daily Results**  
Reach  
1,800,000 - 12,000,000 (of 13,900,000)

The accuracy of estimates is based on factors like past campaign data, the budget you entered and related data. Numbers are provided to give you an idea of performance for your budget, but are only estimates and don't guarantee results.

Were these estimates helpful?

<https://www.facebook.com/ads/manager/creation>

## FACEBOOK'S REACH (ON REACH)

Source: Facebook Ads Manager based on data pulled on September 20<sup>th</sup>, 2017; P18-34, United States, "people who live in this location." "FB Potential Reach" includes Facebook + Instagram + Audience Network + Messenger platforms. (Facebook numbers are fluid and are subject to change based on the date when numbers are pulled).





# To Make A Buy, It's As "Simple" As Selecting Your Target Then Setting The Budget, Campaign Dates And Entering A Bid Amount

Once all buy parameters are set, Facebook will calculate the estimated daily reach of your campaign based on "past campaign data, the budget entered and market data"

The screenshot shows the Facebook Ads Manager interface with the following sections and annotations:

- Left Sidebar:** Contains navigation links for Campaign, Ad Account, Ad Set, and Ad.
- Ad Set Name:** Set to "US - 18-34".
- Budget & Schedule:**
  - Select target in the "Audience" section:** Points to the Ad Set Name field.
  - Set Your Budget:** Points to the Budget field, which is set to "Daily Budget" of "\$5000.00".
  - Set Your Desired Campaign Dates:** Points to the Schedule section, which is set to "Run my ad set continuously starting today" with a start date of "Sep 22, 2017" and an end date of "Sep 23, 2017".
- Optimization for Ad Delivery:** Set to "Reach".
- Frequency Cap:** Set to "1 impression every 1 day".
- Bid Amount:**
  - Decide how often people see your ad:** Points to the Frequency Cap.
  - Select an automatic bid or enter a bid amount yourself based on 1,000 impressions, i.e. CPM (cost-per-thousand):** Points to the Bid Amount section, which is set to "Automatic".
- When You Get Charged:** Set to "Impression".
- Ad Scheduling:** Set to "Run ads all the time".
- Delivery Type:** Set to "Standard - Show your ads throughout your selected schedule (recommended)".
- Audience Size:** A gauge showing "Potential Reach: 97,000,000 people".
- Estimated Daily Results:**
  - Reach: 1,300,000 - 12,000,000 (of 73,000,000)
  - Text: "The accuracy of estimates is based on factors like past campaign data, the budget you entered and market data. Numbers are provided to give you an idea of performance for your budget, but are only estimates and don't guarantee results. Were these estimates helpful?"

<https://www.facebook.com/ads/manager/creation>

## FACEBOOK'S REACH (ON REACH)

Source: Facebook Ads Manager based on data pulled on September 20<sup>th</sup>, 2017; P18-34, United States, "people who live in this location." "FB Potential Reach" includes Facebook + Instagram + Audience Network + Messenger platforms. (Facebook numbers are fluid and are subject to change based on the date when numbers are pulled).



# To Verify The Accuracy Of The Estimated Daily Reach Metric, We Built A One-Day Campaign Designed To Maximize Reach

While a one-day schedule is not a “typical” campaign length, we were limited to this time period for comparison purposes since Facebook only reports estimated reach results at the daily level

The screenshot shows the Facebook Ads Manager interface for creating a new ad set. The left sidebar shows the navigation menu with 'Ad Set' selected. The main content area is divided into sections: 'Ad Set Name', 'Budget & Schedule', 'Audience Size', 'Estimated Daily Results', 'Optimization for Ad Delivery', 'Bid Amount', 'Where You Get Charged', 'Ad Scheduling', and 'Delivery Type'.

Annotations on the screenshot include:

- Ad Set Name:** P18-34
- Budget & Schedule:**
  - Budget:** \$5,000 Daily Budget
  - Schedule:** One-Day schedule (Sep 22, 2017 to Sep 23, 2017)
  - Frequency Cap:** 1x Frequency cap to maximize reach
- Audience Size:** Potential Reach: 97,000,000 people
- Estimated Daily Results:** Reach: 1,900,000 - 12,000,000 (of 73,000,000)
- Bid Amount:** \$6.59 per 1,000 impressions
- Where You Get Charged:** Impression
- Ad Scheduling:** Run ads all one time
- Delivery Type:** Standard - Show your ads throughout your selected schedule (recommended)

Additional text annotations include:

- "Your ads will run for 1 day. You'll spend no more than \$5,000.00."
- "The manual bid option includes both a Facebook suggested bid / CPM and range"
- "Low Range" Bid / CPM = \$5.13
- "Suggested" Bid / CPM = \$6.59
- "High Range" Bid / CPM = \$8.97

<https://www.facebook.com/ads/manager/creation>

## FACEBOOK'S REACH (ON REACH)

Source: Facebook Ads Manager based on data pulled on September 20<sup>th</sup>, 2017; P18-34, United States, "people who live in this location." "FB Potential Reach" includes Facebook + Instagram + Audience Network + Messenger platforms. (Facebook numbers are fluid and are subject to change based on the date when numbers are pulled).



# Based On The Budget & Bid, An Advertiser Can Use Media Math To Figure Out Their Expected Campaign Impressions

$$\text{Budget} / \text{CPM} \times 1,000 = \text{Impressions}$$

The screenshot shows the Facebook Ads Manager interface for a campaign named "US - 18-34". The left sidebar contains navigation options: Campaign, Ad Account, Ad Set, and Ad. The main content area is divided into sections for Budget & Schedule, Audience Size, and Estimated Daily Results.

**Budget & Schedule:** The daily budget is set to \$5,000.00 USD. The schedule is set to run from September 22, 2017, to September 23, 2017, from 12:00 AM to 12:00 AM. The optimization for ad delivery is set to Reach. The frequency cap is set to 1 impression every 1 day. The bid amount is set to Manual, with a suggested bid of \$6.59 USD (\$5.13-\$8.97).

**Audience Size:** The potential reach is 97,000,000 people. The audience selection is fairly broad.

**Estimated Daily Results:** The reach is estimated to be between 1,900,000 and 12,000,000 (of 73,000,000).

**Media Math Calculations:** At a \$5K budget, the following impressions\* are to be delivered based on the CPMs:

Bid / CPM	Impressions
"Low Range" Bid / CPM = \$5.13	974,659 IMPS
"Suggested" Bid / CPM = \$6.59	758,725 IMPS
"High Range" Bid / CPM = \$8.97	557,414 IMPS

\*In theory, impressions should be interchangeable with unique reach with a 1x frequency cap.

<https://www.facebook.com/ads/manager/creation>

## FACEBOOK'S REACH (ON REACH)

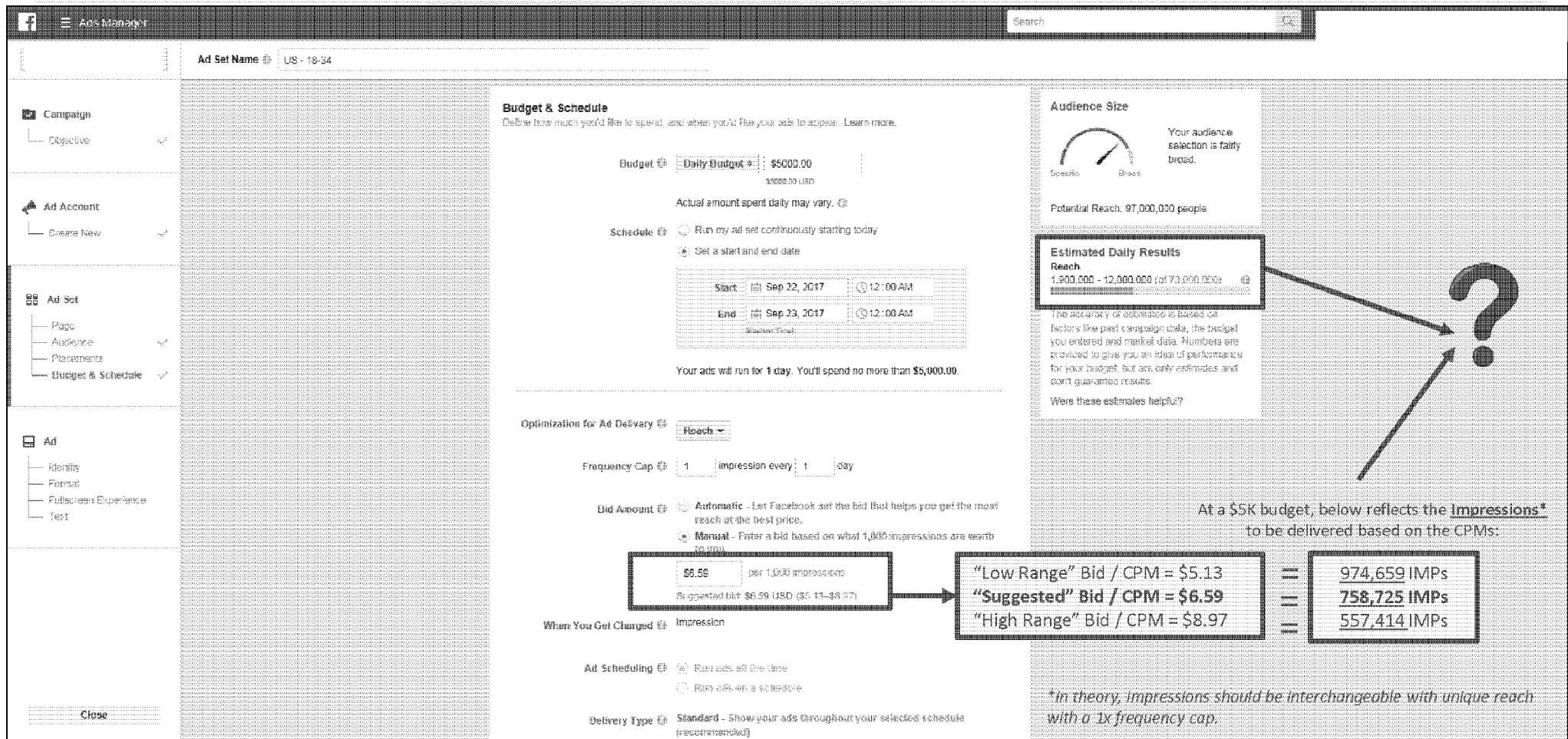
Source: Facebook Ads Manager based on data pulled on September 20<sup>th</sup>, 2017; P18-34, United States, "people who live in this location." "FB Potential Reach" includes Facebook + Instagram + Audience Network + Messenger platforms. (Facebook numbers are fluid and are subject to change based on the date when numbers are pulled).





# From The Math, An Advertiser Would See That The Impressions Are Much Lower Than Facebook's Estimated Reach Results

It's important to note that in a one-day campaign with a 1x frequency cap (as reflected below), the term "impressions" can be used interchangeably with "reach"



**Budget & Schedule**  
Define how much you'd like to spend, and when you'd like your ads to appear. Learn more.

Budget ☐ Daily Budget ☒ \$5000.00  
\$2000.00 USD

Actual amount spent daily may vary.

Schedule ☐ Run my ad set continuously starting today  
☒ Set a start and end date

Start: Sep 22, 2017 12:00 AM  
End: Sep 23, 2017 12:00 AM  
(Estimated Time)

Your ads will run for 1 day. You'll spend no more than \$5,000.00.

Optimization for Ad Delivery ☐ Reach

Frequency Cap ☐ 1 impression every 1 day

Bid Amount ☐ Automatic - Let Facebook set the bid that helps you get the most reach at the best price.  
☒ Manual - Enter a bid based on what 1,000 impressions are worth (in USD)

\$6.59 per 1,000 impressions  
Suggested bid: \$6.59 USD (\$5.13-\$8.97)

Where You Get Charged ☐ Impression

Ad Scheduling ☐ Run ads all the time  
☐ Run ads on a schedule

Delivery Type ☐ Standard - Show your ads throughout your selected schedule (recommended)

**Audience Size**  
Your audience selection is fairly broad.  
Potential Reach: 97,000,000 people

**Estimated Daily Results**  
Reach: 1,900,000 - 12,000,000 (of 73,000,000)

The accuracy of estimates is based on factors like past campaign data, the budget you entered and manual data. Numbers are provided to give you an idea of performance for your budget, but are only estimates and don't guarantee results.

Were these estimates helpful?

At a \$5K budget, below reflects the impressions\* to be delivered based on the CPMs:

"Low Range" Bid / CPM = \$5.13	=	974,659 IMPs
"Suggested" Bid / CPM = \$6.59	=	758,725 IMPs
"High Range" Bid / CPM = \$8.97	=	557,414 IMPs

\*In theory, impressions should be interchangeable with unique reach with a 1x frequency cap.

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# Notably, There Is Also A Very Wide Gap Within The Estimated Daily Reach Range For A Platform That Touts Its' Precision Targeting

There is a gap of over 10 million A18-34's (1.9MM - 12.0MM) between the low & high range for a demo-targeted, one-day \$5K buy

**Ad Set Name:** US - 18-34

**Budget & Schedule**  
 Define how much you'd like to spend, and when you'd like your ads to appear. [Learn more.](#)

**Budget:** ☐ Daily Budget ☒ \$5000.00 USD  
 Actual amount spent daily may vary.

**Schedule:** ☐ Run my ad set continuously starting today ☒ Set a start and end date

**Start:** Sep 22, 2017 12:00 AM  
**End:** Sep 23, 2017 12:00 AM  
 (Estimated Time)

Your ads will run for 1 day. You'll spend no more than \$5,000.00.

**Optimization for Ad Delivery:** ☒ Reach

**Frequency Cap:** 1 impression every 1 day

**Bid Amount:** ☐ Automatic - Let Facebook set the bid that helps you get the most reach at the best price. ☒ Manual - Enter a bid based on what 1,000 impressions are worth (in USD).

**Bid:** \$6.59 per 1,000 impressions  
 Suggested bid: \$6.59 USD (\$5.13-\$8.97)

**Where You Get Charged:** ☒ Impression

**Ad Scheduling:** ☐ Run ads all day long ☒ Run ads on a schedule

**Delivery Type:** ☒ Standard - Show your ads throughout your selected schedule (recommended)

**Audience Size**  
 Your audience selection is fairly broad.  
 Potential Reach: 97,000,000 people

**Estimated Daily Results**  
 Reach: 1,900,000 - 12,000,000 (of 73,000,000)

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# Key Question: How Can Facebook's Estimated Daily Reach Be 2x - 12x Times Larger Than What It Should Be Based On Basic Media Math?

**Impressions Based On Budget & Bid/CPM:**  
557.4K - 974.7K

**Facebook's Estimated Daily Reach:**  
1.9MM - 12.0MM

## Question:

How can FB's estimated daily reach be between **1.9MM - 12.0MM** for a one-day \$5K schedule with a 1x freq cap when media math (\$\$\$ / CPM = IMPs) says the impressions range for the campaign based on the suggested bid range would be between **557.4K - 974.7K**?

### Audience Size



Your audience selection is fairly broad.

Potential Reach: 97,000,000 people

### Estimated Daily Results

Reach  
1,900,000 - 12,000,000 (of 73,000,000)

The accuracy of estimates is based on factors like past campaign data, the budget you entered and market data. Numbers are provided to give you an idea of performance for your budget, but are only estimates and don't guarantee results.

Were these estimates helpful?

At a \$5K budget, below reflects the **impressions\*** to be delivered based on the CPMs:

"Low Range" Bid / CPM = \$5.13  
"Suggested" Bid / CPM = \$6.59  
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= 974,659 IMPs  
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# According To The Math, It Would Take A Lot More Than The \$5K Budget To Achieve The Campaign Reach Facebook Estimates

Based on Facebook's suggested bid (CPM) range, it would actually cost anywhere between \$9.7K - \$107.6K to deliver against their own P18-34 estimated daily reach for a one-day campaign schedule

	Original Budget	Bid / CPM	"Low End" Reach Range		"High End" Reach Range	
			Facebook Est. Daily Reach	Revised Budget	Facebook Est. Daily Reach	Revised Budget
"Low Range" Bid / CPM	\$5,000	\$5.13	1,900,000	<b>\$9,747</b>	12,000,000	<b>\$61,560</b>
"Suggested" Bid / CPM	\$5,000	\$6.59	1,900,000	\$12,521	12,000,000	\$79,080
"High Range" Bid / CPM	\$5,000	\$8.97	1,900,000	<b>\$17,043</b>	12,000,000	<b>\$107,640</b>

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# Apparently Other People Have Noticed This Reach Discrepancy As Well

The screenshot shows the Facebook Business Advertiser Help Center. The main heading is "Facebook estimated reach is really off...". Below it, a user asks: "Hi! I am running an ad to promote my page on Facebook and it says the estimated daily reach would be from 1,300 to 3,200. I have ran it for approx. 4 days and so far the total reach has only been 210 people total. Is there a reason for this that could be corrected?". The question is marked as a "Good Question" and has 2 votes, 2 followers, and has been seen by 346 people. A featured answer from John, a Facebook Help Team member, responds: "Hi Jason, The estimated daily reach calculator is only an estimate. The estimation is based on your defined audience and ad set budget, and not how people will respond to your creative. The numbers are only an approximate estimate to help you decide on how much you want to spend on ads, and not as a prediction of how many people will actually see your ad once it's running. If your ads are receiving a much lower reach than estimated, it's possible that your ad's creative might need some tweaking to resonate more positively with your audience." A callout box points to the word "creative" in the answer with the text: "What does the ad's creative have to do with Reach?".

FACEBOOK'S REACH (ON REACH)

## Closing Thoughts

Whether this is truly another metrics glitch remains to be seen. However, with questions of trust regarding ad-tech platforms at an all-time high among many marketers, our analysis provides another instance where first-party data should at least be questioned, or even challenged, particularly when the numbers don't align with universally accepted metrics such as U.S. Census Bureau population data and basic media math.

Advertisers and their agencies must remain vigilant with all their media partners when it comes to their campaign executions and deliveries. We believe in complete transparency as an industry and for advertisers to verify their campaign metrics and results through independent, third party data sources.

And for everyone, both advertisers and agencies, as you plan your campaigns, execute your schedules and evaluate your post-buy analyses across your multiplatform media partners, our advice continues to remain the same:

## Assume Nothing, Investigate Everything

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**TheVAB.com**



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Like us:  
**facebook.com/VideoAdvertisingBureau**

